

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/590,171  
Source: IFWP  
Date Processed by STIC: 8/30/06

***ENTERED***



IFWP

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/590,171

DATE: 08/30/2006

TIME: 09:06:53

Input Set : A:\P03371US0 Sequence listing).txt  
 Output Set: N:\CRF4\08302006\J590171.raw

3 <110> APPLICANT: F2G LIMITED  
 5 <120> TITLE OF INVENTION: 2031 OXIDOREDUCTASE  
 7 <130> FILE REFERENCE: HO-P03371US0  
 C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/590,171  
 C--> 10 <141> CURRENT FILING DATE: 2006-08-18  
 12 <150> PRIOR APPLICATION NUMBER: GB 0403746.1  
 13 <151> PRIOR FILING DATE: 2004-02-19  
 15 <150> PRIOR APPLICATION NUMBER: GB 0424080.0  
 16 <151> PRIOR FILING DATE: 2004-10-29  
 18 <160> NUMBER OF SEQ ID NOS: 101  
 20 <170> SOFTWARE: PatentIn version 3.2  
 22 <210> SEQ ID NO: 1  
 23 <211> LENGTH: 1908  
 24 <212> TYPE: DNA  
 25 <213> ORGANISM: Aspergillus fumigatus  
 27 <400> SEQUENCE: 1  
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 32 ctgtctccac tattcggcaa gattgtaaat caagctgaa gaagcggagc aattcttgg 180  
 34 agtcgtatgt tctactgtt tctgtgcctg ggcgcagacgg gtatataaat aaagatcacc 240  
 36 gcacccggagga gtttcttacc aacccatcaa taaccatcca caatctccta caacaaaaat 300  
 38 gactgtcgcc gatatcgacg ttccctcctgc cgagggcatc ccctacttca ctccggccca 360  
 40 gaaccctctt gccggtaacgg cagctaacc ccagaccaat ggccagaaga tccccaaagct 420  
 42 ctccacgccc ttgaccatcc gtggcgtaac cttccagaac cgccttgggtg taagtccgtt 480  
 44 tgcccttgc tatacgacg aaagctaatt ccccgctcagc tcgcgcctt ctgccaatac 540  
 46 tccgcccagg acggccacat gaccgactac cacatcgccc atctgggtgg gatcgcccaa 600  
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 52 ttctgtcaca gccaggccca gaagatcgcc gtgcagctt cccatgcgg ccggaaagcc 780  
 54 accaccgttgc cgccctggat ctcattctcg gccatcgca cggagaaggt cggccggatgg 840  
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 58 gccatgacgc tggatgagat cgagcgttcc aagaaggact gggtggcgcc cacgaagcgc 960  
 60 gccatcgccg ccgggtcgga ctttgcgag attcacaatg cgcattggata cctgtgtcg 1020  
 62 tcattccctt cggccggccgc caacaaccgc acggaccagt acggcggggtc ttgcgagaac 1080  
 64 cgcattccggc tgcgtctcgat gattgcgcag ttgactcggtt acgcgcgtcg ccctcatgtg 1140  
 66 cccgtttcc tgcgcatttc ggctcgccgac tggcgagg agaccctgcc ggagcagagc 1200  
 68 tggaaagtccgg aggataccgt gccgttcggc caggagctgg tcaagcaggc cggccgttgc 1260  
 70 ctgatcgata tcagcagccg tgggttccgc ggcgcagcaga agatcaagtc cggccctgcc 1320  
 72 ttccagggtgc ctttgcgtt gggcgtaag aaggccgtcg ggcgcacatgt gctgggtgcc 1380  
 74 gccgtgggtg ccatcaccaa cggcaagcag ggcgcacatgt ttcttagagga gcaaggatatc 1440  
 76 gacgttgcgc tgggttgcgc tgggttcccg aaggatcccg gtctggcctg gacgtttgc 1500  
 78 cagcaccccg ggcgcacatgt ctccatggcc aaccagatcc gctggggctt caccggcgt 1560  
 80 ggaggcaccgc cgtacattga tccttcgggtg tacaagcagt ctatccgt tgcgtatgtt 1620

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82 atagatagag ttgaagatga tacctcatag acgatcaatg gacccttgca tattatttct 1680  
 84 cgtctcctgc gtagtgcata ggtattcaca gtagtgcgt cctcttaagt ttctccgtca 1740  
 86 ttcgttctat tctactccaa tcgcaacgcg tggcggaccac ggatcgagtc gaatttctcc 1800  
 88 gtcgttcgta tctgatcaat ataaaaaagcg gggatggct tgaccccgcg cagaatgtcg 1860  
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 93 <210> SEQ ID NO: 2  
 94 <211> LENGTH: 1445  
 95 <212> TYPE: DNA  
 96 <213> ORGANISM: Aspergillus fumigatus  
 98 <400> SEQUENCE: 2  
 99 gtatgttcta ctgatttctg tgactggcg agacgggtat ataaataaaag atcaccgcac 60  
 101 cgaggagttt cttaccaacc catcaataac catccacaat ctcctacaac aaaaatgact 120  
 103 gtcgcccata tcgacgttcc ttctgcccgg ggcatcccct acttcactcc ggcccagaac 180  
 105 cctcctgcgg gtacggcagc taaccccccgg accaatggcc agaagatccc caagctcttc 240  
 107 acgcccgttgc ccattccgtgg cgtcacccctc cagaaccggcc ttgggtctcgcc gcccctctgc 300  
 109 caataactccgg cccaggacgg ccacatgacc gactaccaca tcgccccatct gggtgggatc 360  
 111 gcccacgcg gacccggcct gatgctgatt gaggcgaccg cgttccagcc cgaaggccgc 420  
 113 atcacccttc aggatgtcggt tctgtggaa gactccca gtcgccccatgc gcccggggtc 480  
 115 atcgacttcg tgcacagcca gggccagaag atcggcgtgc agcttgccta tgccggccgg 540  
 117 aaagccacca cgggtgcgcctt ctggatctca ttctcgccca tcgacgcggaa gaaggtcgcc 600  
 119 ggatggccgg accccgcgtca aaggggcccg cgatatcccc tttgcggagc ctttcgccaa 660  
 121 gcccacggcc atgacgtcggt atgagatcga gcagttcaag aaggacttggg tggccggcac 720  
 123 gaagcgcgc accgcgcgcg gtgcggactt tgcgagatt cacaatgcgc atgataac 780  
 125 gctgtcgtca ttccctctcgcc cggccgcctt caaccgcacg gaccagtacg gcccgtcggt 840  
 127 cgagaaccgc acccggtgtt ctctcgagat tgcgcgttg actcgggacg cgcgcggccc 900  
 129 taaatgtgcgg gttttctgc gcatttcggc ttcggactgg tgcgaggaga ccctgcggga 960  
 131 gcagagctgg aagtccggagg ataccgtgcg gttcgcgcag gagctggtaa agcaggccgc 1020  
 133 cgttgcgtcg atcgatatca gcagcgggtgg ttttcgcgc cagcagaaga tcaagtccgg 1080  
 135 cccgccttc cagggtgcctt ttgcgtgcgc cgtgaagaag gcccgtgcgc acaagctgt 1140  
 137 gtttgcgcgc gttgggtgcctt tcaccaacgg caagcaggcg aatcagatcc tagaggagca 1200  
 139 ggatatcgac gttgcgttgg ttggccgtgg gttccagaag gatccgcgtc tggcctggac 1260  
 141 gtttgcgtcg cacctcggcg tcgaaatctc catggccaa cagatccgtt gggcttcac 1320  
 143 cccgcgtggc ggcacccgtt acattgtatcc ttgcgtgtac aagcagtcta ttttcgtatgt 1380  
 145 atagagtata gatagagttt aagatgatac ctcatagacg atcaatggac ctttcgtatgt 1440  
 147 tattt 1445  
 150 <210> SEQ ID NO: 3  
 151 <211> LENGTH: 422  
 152 <212> TYPE: PRT  
 153 <213> ORGANISM: Aspergillus fumigatus  
 155 <400> SEQUENCE: 3  
 157 Met Thr Val Ala Asp Ile Asp Val Pro Pro Ala Glu Gly Ile Pro Tyr  
 158 1 5 10 15  
 161 Phe Thr Pro Ala Gln Asn Pro Pro Ala Gly Thr Ala Ala Asn Pro Gln  
 162 20 25 30  
 165 Thr Asn Gly Gln Lys Ile Pro Lys Leu Phe Thr Pro Leu Thr Ile Arg  
 166 35 40 45  
 169 Gly Val Thr Phe Gln Asn Arg Leu Gly Leu Ala Pro Leu Cys Gln Tyr  
 170 50 55 60  
 173 Ser Ala Gln Asp Gly His Met Thr Asp Tyr His Ile Ala His Leu Gly

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174 65 70 75 80  
 177 Gly Ile Ala Gln Arg Gly Pro Gly Leu Met Leu Ile Glu Ala Thr Ala  
 178 85 90 95  
 181 Val Gln Pro Glu Gly Arg Ile Thr Pro Gln Asp Val Gly Leu Trp Lys  
 182 100 105 110  
 185 Asp Ser Gln Ile Ala Pro Met Arg Arg Val Ile Asp Phe Val His Ser  
 186 115 120 125  
 189 Gln Gly Gln Lys Ile Gly Val Gln Leu Ala His Ala Gly Arg Lys Ala  
 190 130 135 140  
 193 Thr Thr Val Ala Pro Trp Ile Ser Phe Ser Ala Ile Ala Thr Glu Lys  
 194 145 150 155 160  
 197 Val Gly Gly Trp Pro Asp Arg Val Lys Gly Pro Gly Asp Ile Pro Phe  
 198 165 170 175  
 201 Ala Glu Pro Phe Ala Lys Pro Lys Ala Met Thr Leu Asp Glu Ile Glu  
 202 180 185 190  
 205 Gln Phe Lys Lys Asp Trp Val Ala Ala Thr Lys Arg Ala Ile Ala Ala  
 206 195 200 205  
 209 Gly Ala Asp Phe Val Glu Ile His Asn Ala His Gly Tyr Leu Leu Ser  
 210 210 215 220  
 213 Ser Phe Leu Ser Pro Ala Ala Asn Asn Arg Thr Asp Gln Tyr Gly Gly  
 214 225 230 235 240  
 217 Ser Phe Glu Asn Arg Ile Arg Leu Ser Leu Glu Ile Ala Gln Leu Thr  
 218 245 250 255  
 221 Arg Asp Ala Val Gly Pro His Val Pro Val Phe Leu Arg Ile Ser Ala  
 222 260 265 270  
 225 Ser Asp Trp Cys Glu Glu Thr Leu Pro Glu Gln Ser Trp Lys Ser Glu  
 226 275 280 285  
 229 Asp Thr Val Arg Phe Ala Gln Glu Leu Val Lys Gln Gly Ala Val Asp  
 230 290 295 300  
 233 Leu Ile Asp Ile Ser Ser Gly Gly Val Leu Ala Gln Gln Lys Ile Lys  
 234 305 310 315 320  
 237 Ser Gly Pro Ala Phe Gln Val Pro Phe Ala Val Ala Val Lys Lys Ala  
 238 325 330 335  
 241 Val Gly Asp Lys Leu Leu Val Ala Ala Val Gly Ala Ile Thr Asn Gly  
 242 340 345 350  
 245 Lys Gln Ala Asn Gln Ile Leu Glu Glu Gln Asp Ile Asp Val Ala Leu  
 246 355 360 365  
 249 Val Gly Arg Gly Phe Gln Lys Asp Pro Gly Leu Ala Trp Thr Phe Ala  
 250 370 375 380  
 253 Gln His Leu Gly Val Glu Ile Ser Met Ala Asn Gln Ile Arg Trp Gly  
 254 385 390 395 400  
 257 Phe Thr Arg Arg Gly Gly Thr Pro Tyr Ile Asp Pro Ser Val Tyr Lys  
 258 405 410 415  
 261 Gln Ser Ile Phe Asp Val  
 262 420  
 265 <210> SEQ ID NO: 4  
 266 <211> LENGTH: 1352  
 267 <212> TYPE: DNA  
 268 <213> ORGANISM: Aspergillus fumigatus

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273	actccggcgc	aagagccgcc	tgctggcacc	gctgtaatc	ctcagtctga	tggatcgca	120
275	cctcccaagc	tcttcggcc	gcttcgggt	cgggtctga	ccttcacaa	tcgcattggc	180
277	gtgagtgcag	tccaggcaat	tatgctatcc	atcctatgcg	agcccttgc	ttgaaacagc	240
279	cgcttacagg	aatgataat	gagtagctat	cgccactctg	ccaatactca	ggcgacgatg	300
281	gacacatgac	tccttggcat	atggcacatc	ttggagggat	tgcccagcga	ggggcaggat	360
283	tcttgatgg	cgagggcaaca	gcagtcgaac	cggaaggcag	gatcacc	cagacactgg	420
285	gactatggaa	agactcgca	attgagccat	tgagccgcgt	gatcgagtt	gtccacagtc	480
287	agaaccagct	tatcggcgtg	cagatcgac	acgcaggctcg	caaggccagc	accgtcgcc	540
289	catggctctc	ggccaacgat	accgcctccg	agaagatggg	cggctggca	ggccgcgtca	600
291	aaggcccac	aatgtgccc	ttcaccgtt	agaaccctgt	gccgaaggag	atgaccaagc	660
293	agatatcga	ggatotgaag	accgcctggg	tggccgctgt	caaacggct	gttaaggccg	720
295	gagccactt	tatcgagatc	cacaatgcgc	atggctatct	tctgatgtcg	ttctctctcc	780
297	ctgcggtaa	cacgagaaca	gacgagtacg	gaggcagtt	tgagaatcgc	atccggctca	840
299	gtctggagat	cgccaaagctc	acccgcgaaa	atgtcccaa	ggatatgcct	gtcttcctgc	900
301	gggtctccgc	caccgattgg	ctggaggagg	tgcagccaa	caagcccagc	tggcgaggcg	960
303	tggacactgt	ccgatttgcg	aagatcctgg	cagaaacggg	ttacgttgc	gtgttgacg	1020
305	tgagcagtgg	cggcactcat	tcggagcagc	atatccacgc	gaagccaggg	ttccaggcac	1080
307	cctttgtat	tgccgtcaag	aacgcgtcg	gggacaaact	cgca	tcagtggt	1140
309	tgattgcccag	cgcgcatttg	gccattct	tgttgagaa	ggacggactg	gacccgtgc	1200
311	tggttggacg	tggctccag	aagaacccgg	ggctgtgtg	ggcgtggcc	gacgagctga	1260
313	atgttagagat	ctccatggct	aatcagatcc	gatgggttt	ctcgccgc	ggtgctggc	1320
315	cttaccttag	gaagaaaactc	gagaagat	aa			1352

318 &lt;210&gt; SEQ ID NO: 5

319 &lt;211&gt; LENGTH: 1266

320 &lt;212&gt; TYPE: DNA

321 &lt;213&gt; ORGANISM: Aspergillus fumigatus

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326	actccggcgc	aagagccgcc	tgctggcacc	gctgtaatc	ctcagtctga	tggatcgca	120
328	cctcccaagc	tcttcggcc	gcttcgggt	cgggtctga	ccttcacaa	tcgcattggc	180
330	ctatcgccac	tctgccaata	ctcagccac	gatggacaca	tgactccctg	gcatatggca	240
332	catcttggag	ggattgccc	gcgagggcca	ggattctga	tggcgaggc	aacagcagtc	300
334	gaaccggaag	gcaggatcac	cccgcaggac	ctgggactat	ggaaagactc	gcagattgag	360
336	ccattgagcc	gcgtgatcga	gttgcac	agtcaaaacc	agcttatcg	cgtcagatc	420
338	gcacacgcag	gtcgcaaggc	cagcaccgtc	gcccattggc	tctcgccaa	cgataccg	480
340	tccgagaaga	tggcgccgt	gccaggccgc	gtcaaaaggcc	cgacaaatgt	gcccttcacc	540
342	gttaagaacc	ctgtggccaa	ggagatgacc	aagcaggata	tcgaggatct	gaagaccg	600
344	tgggtggccg	ctgtcaaacg	ggctgttaag	gccggagcc	actttatcga	gatccacaat	660
346	ggcgcattgt	atcttgcgt	gtcggttcc	tccctgcgg	tcaacacgag	aacagacgag	720
348	tacggaggca	gttttgagaa	tcgcattccgg	ctcagtctgg	agatcgccaa	gctcacc	780
350	gaaaatgtgc	ccaaggat	gcctgtctc	ctgcgggtct	ccgcacccga	tggctggag	840
352	gaggtgcagc	cgaacaagcc	cagctggcga	ggcgtggaca	ctgtccgatt	tgcgaagatc	900
354	ctggcagaaa	cgggttacgt	tgacgtgc	gacgtgagca	gtggcgac	tcattcg	960
356	cagcatatcc	acgcgaagcc	aggctccag	gcaccctt	ctattgcgt	caagaacg	1020
358	gtcgccggaca	aactcgcagt	gcatcagt	ggtatgatt	ccagcgc	tttggccaa	1080
360	tccttgttgg	agaaggacgg	actggac	gtgttgtt	gacgtgg	ccagaagaac	1140
362	ccggggctgg	tgtggcg	ggccgacgag	ctgaatgtag	agatctccat	ggctaattcag	1200

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 366 atataa 1266  
 369 <210> SEQ ID NO: 6  
 370 <211> LENGTH: 421  
 371 <212> TYPE: PRT  
 372 <213> ORGANISM: Aspergillus fumigatus  
 374 <400> SEQUENCE: 6  
 376 Met Ser Gln Pro Val Val Pro Asp Ile Glu Asn Lys Pro Ala Pro Gly  
 377 1 5 10 15  
 380 Ile Ser Tyr Phe Thr Pro Ala Gln Glu Pro Pro Ala Gly Thr Ala Ala  
 381 20 25 30  
 384 Asn Pro Gln Ser Asp Gly Ser Ala Pro Pro Lys Leu Phe Arg Pro Leu  
 385 35 40 45  
 388 Ser Val Arg Gly Leu Thr Phe His Asn Arg Ile Gly Leu Ser Pro Leu  
 389 50 55 60  
 392 Cys Gln Tyr Ser Ala Asp Asp Gly His Met Thr Pro Trp His Met Ala  
 393 65 70 75 80  
 396 His Leu Gly Gly Ile Ala Gln Arg Gly Pro Gly Phe Leu Met Val Glu  
 397 85 90 95  
 400 Ala Thr Ala Val Glu Pro Glu Gly Arg Ile Thr Pro Gln Asp Leu Gly  
 401 100 105 110  
 404 Leu Trp Lys Asp Ser Gln Ile Glu Pro Leu Ser Arg Val Ile Glu Phe  
 405 115 120 125  
 408 Val His Ser Gln Asn Gln Leu Ile Gly Val Gln Ile Ala His Ala Gly  
 409 130 135 140  
 412 Arg Lys Ala Ser Thr Val Ala Pro Trp Leu Ser Ala Asn Asp Thr Ala  
 413 145 150 155 160  
 416 Ser Glu Lys Met Gly Gly Trp Pro Gly Arg Val Lys Gly Pro Thr Asn  
 417 165 170 175  
 420 Val Pro Phe Thr Val Lys Asn Pro Val Pro Lys Glu Met Thr Lys Gln  
 421 180 185 190  
 424 Asp Ile Glu Asp Leu Lys Thr Ala Trp Val Ala Ala Val Lys Arg Ala  
 425 195 200 205  
 428 Val Lys Ala Gly Ala Asp Phe Ile Glu Ile His Asn Ala His Gly Tyr  
 429 210 215 220  
 432 Leu Leu Met Ser Phe Leu Ser Pro Ala Val Asn Thr Arg Thr Asp Glu  
 433 225 230 235 240  
 436 Tyr Gly Gly Ser Phe Glu Asn Arg Ile Arg Leu Ser Leu Glu Ile Ala  
 437 245 250 255  
 440 Lys Leu Thr Arg Glu Asn Val Pro Lys Asp Met Pro Val Phe Leu Arg  
 441 260 265 270  
 444 Val Ser Ala Thr Asp Trp Leu Glu Glu Val Gln Pro Asn Lys Pro Ser  
 445 275 280 285  
 448 Trp Arg Gly Val Asp Thr Val Arg Phe Ala Lys Ile Leu Ala Glu Thr  
 449 290 295 300  
 452 Gly Tyr Val Asp Val Leu Asp Val Ser Ser Gly Gly Thr His Ser Glu  
 453 305 310 315 320  
 456 Gln His Ile His Ala Lys Pro Gly Phe Gln Ala Pro Phe Ala Ile Ala  
 457 325 330 335

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**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:27; Xaa Pos. 187

Seq#:38; Xaa Pos. 22,37,196,200,216

**VERIFICATION SUMMARY**

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Input Set : A:\P03371US0 Sequence listing).txt  
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L:9 M:270 C: Current Application Number differs, Replaced Current Application Number  
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:2037 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:176  
L:2476 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:16  
M:341 Repeated in SeqNo=38